

ABSTRACT OF THE DISCLOSURE

A power amplifier includes larger size transistors to provide higher power gain at lower frequencies. Transistors of transistor unit cells include a horseshoe-shaped emitter and a strip-shaped base to increase gain. Transistors are combined at a first level to form transistor arrays, which are combined with bonding wires at a second level to an output micro strip transmission line. A  $V_{be}$  referenced bias circuit may include a smart function to lower quiescent current.